

## CLAIMS

1. An end cap assembly for an electric motor comprising:  
an outer part supporting a bearing and motor terminals; and  
5 an inner part having  
a first brush cage, a second brush cage spaced from the first brush cage by  
180°, and provision for locating a third and a fourth brush cage at a desired location  
circumferentially between the first and second brush cages.
- 10 2. An assembly according to claim 1, wherein the first and second brush cages  
are integrally molded with the inner part.
3. An end cap assembly according to claim 1, wherein the third and fourth brush  
cages are locatable angularly spaced between 75° and 90° from the first brush cage.
- 15 4. An end cap assembly according to claim 1, wherein the third and fourth brush  
cages are fixed to the inner part by an epoxy resin.
5. An end cap assembly according to claim 1, wherein the third and fourth brush  
20 cages are molded resin parts and are joined to the inner part by ultrasonic welding.
6. An end cap assembly according to claim 1, wherein a detent is formed between  
the third and fourth brush cages and the inner part, which detent radially locates the  
third and fourth brush cages so that each of the brush cages has a corresponding part  
25 located at an equal radial distance from a central axis of the end cap.
7. An end cap assembly according to claim 6, wherein the detent means  
comprises projections on an axially outer mating surface of each of the third and  
fourth brush cages which engage arcuate grooves in an axially inner locating surface  
30 of the inner part and the locating surface is juxtaposed the mounting surface of each  
of the third and fourth brush cages to set the radial distance while allowing the  
circumferential spacing to be determined during fixing of the third and fourth brush  
cages to the inner part during assembly.
- 35 8. An end cap assembly according to claim 1, wherein the inner and outer parts  
have noise suppression components.

9. An end cap assembly according to claim 8, wherein the noise suppression components of the inner part includes chokes connected to shunts of brushes slidably mounted in the brush cages by way of a link connector which makes a mechanical type connection with the choke.